

## **REMARKS**

This is a supplemental amendment in response to the Examiner's interview held on January 25, 2010 at the U.S. Patent Office in Alexandria, VA.

### **I. Applicants' Summary of the Discussions during the Interview**

First applicants' representative summarized the arguments for allowance of the rejected claims 1 and 19 over the disclosures of the U.S. Patent 6,005,691 of A. C.Grot, et al, which were presented in the request for reconsideration filed on January 5, 2011. Applicants' representative explained that Grot does not disclose a volume hologram as claimed in claim 1 and 19, but only a surface relief hologram. This distinction is well known in the art as evidenced by column 1 of the U.S. Patent 6,695,213 of Curtis, which is also of record. Also Grot does not disclose an adjacent layer laminated to the volume hologram that produces a wavelength shift due to the surface roughness of the adjacent layer prior to lamination.

During the interview the Examiner indicated that the wording of independent claims 1 and 19 was too broad for several reasons. First

he stated that the definition of “volume hologram” in the fourth paragraph on page 1 of the originally filed U.S. specification should be incorporated in the independent claims to clearly distinguish from the disclosures in the prior art regarding surface relief holograms. The applicants have agreed to that change.

Second the Examiner indicated that the “image reconstruction” operation regarding production of the holographic image that is produced from the volume hologram should be included in the independent claims and handled in a careful manner. The applicants also agreed to that change.

Third the Examiner requested the addition of wording to the independent claims that describes the physical phenomenon or mechanism by which the surface roughness on the adjacent layer causes the wavelength shift of the holographic image. This change cannot be made independent claims because there is no disclosure of the basic phenomenon causing the wavelength shift in the applicants’ originally filed specification. Thus such additions to the claims could be rejected as “new matter”.

The Examiner also mentioned that the order that elements were recited in the claims 1 and 19 and claim format generally did not

conform to the standards of U.S. Patent Practice. This issue has been addressed during the preparation of the above amended and new claims.

During the interview the Examiner agreed to consider a supplemental amendment with amended and new claims addressing the above issues, provided that the supplemental amendment was filed prior to the middle of March 2011.

## **II. Independent Claims 1 and 19**

Independent claims 1 and 19 have not been changed and remain pending. Arguments to overcome their rejection as anticipated by the U.S. Patent of A. C. Grot, et al, were presented in the amendment filed on January 4, 2011, which were summarized during the interview.

## **III. Amended Dependent Claims and New Claims**

Dependent claims 2 and 20 were found to contain allowable subject matter according to the statement on page 5 of the Office Action mailed on October 5, 2010.

Accordingly claims 2 and 20 were amended to include all the features and limitations from claims 1 and 19 respectively, so that the amended claims 2 and 20 are now independent claims, which could now be allowed. The prior art does not disclose or suggest causing a wavelength shift of a holographic image produced from a volume hologram by laminating an adjacent layer with a surface roughness in the claimed range to the volume hologram.

However some additional wording defining the volume hologram was added to claims 2 and 20 from the fourth paragraph on page 1 of the applicants' original specification. Otherwise claims 2 and 19 are basically a combination of claims 1 and 2 and claims 19 and 20 respectively. Also care has been taken to avoid wording that can cause a rejection under 35 U.S.C. § 112, second paragraph.

Furthermore the dependencies of dependent claims 3 to 10 have been changed from claim 1 to the amended independent claim 2. Similarly the dependencies of dependent claims 21 and 22 have been changed from claim 19 to amended independent claim 20. Otherwise no changes have been made in these dependent claims.

New independent claims 23 and 28 are similar to claims 1 and 19, but contain a complete definition of a "volume hologram" from the fourth

paragraph on page 1 of the specification. Also the image reconstruction operation is defined in these new independent claims.

Dependent claims 24 and 29, which depend on claims 23 and 28 respectively, contain the same sort of ranges for the wavelength shift as in claims 2 and 20.

The remaining new dependent claims contain subject matter from the original dependent claims. No new matter has been entered.

#### **IV. Reasons for Allowance of the Claims over the Prior Art**

The reasons to withdraw the rejection of claims as anticipated by Grot present in the Office Action have been provided in the amendment filed on January 5, 2011. These reasons are also applicable to other prior art as explained in the amendment and show that the new and amended claims also should be allowed over A.C. Grot, et al.

The fact that a device or article claim does not include a description of a physical phenomenon or mechanism, by which the device or article operates to perform its intended function, is not a valid basis for a formal rejection under 35 U.S.C. § 112, first paragraph.

The only requirements established by 35 U.S.C. § 112, first paragraph, are that the claim wording should be supported by the written description in the specification and that the invention should be described in such a manner as to enable one skilled in the art to make and/or use the claimed invention.

As far as the written description requirement goes, the wording of the new claims 23 and 28 are fully supported and present in the original claims 1 and 19 and also in the fourth paragraph on page 1 of the applicants' written description.

The description of the methods of laminating the adjacent layer to the core layer on pages 8 and 9 of the applicants' written description should be adequate for one of ordinary skill in the art to make and/or use the claimed invention.

The nature of the adjacent layer laminated to the core layer is defined by functional wording, namely what it does – which is to shift the wavelength of the holographic image. Applicants' dependent claims recite preferred materials for the adjacent layer and preferred ranges of surface roughness.

Accordingly it is respectfully submitted that none of the new claims 23 to 31 and the amended claims should be rejected under 35 U.S.C. § 112, first paragraph.

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance the Examiner is invited to telephone the undersigned at 1-631-549-4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,

/Michael J. Striker/

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